

REMARKS

The application includes claims 1-37 prior to entering this amendment.

The examiner rejects claims 1-13 and 36 under 35 U.S.C. § 102(a) as being anticipated by Ejiri et al (U.S. Patent Application 2002/0089651).

The examiner rejects claims 26-28 and 32-34 under 35 U.S.C. § 103(a) as being unpatentable over Ejiri in view of Kobayashi (U.S. Patent 6,056,408).

The examiner rejects claims 14-19 and 37 under 35 U.S.C. § 103(a) as being unpatentable over Ejiri in view of Kobayashi and Deering (U.S. Patent Application 2002/0008697).

The examiner rejects claim 20-25 and 35 under 35 U.S.C. § 103(a) as being unpatentable over Ejiri in view of Kobayashi and West.

The examiner rejects claims 29-31 under 35 U.S.C. § 103(a) as being unpatentable over Ejiri in view of Kobayashi and Deering.

The applicants amend claims 1, 8, 11-12, 14, 20, and 23-24, add new claims 38-41, and cancel claims 9-10 and 21-22. The application remains with claims 1-8, 11-20, and 23-41 after entering this amendment. The applicants add no new matter and request reconsideration.

Claim Rejections - 35 U.S.C. § 102

The examiner rejects claims 1-13 and 36 as being anticipated by Ejiri. The applicants traverse the rejection for the following reasons.

The current application predistorts an image, to correct any keystone distortion, by vertically and horizontally scaling the original image using a vertical scalar and a horizontal scalar, respectively, and by applying appropriate scaling techniques like pixel replication, spatial and temporal interpolation, digital signal filtering and processing, and the like, as disclosed in the specification, page 4, lines 7-9. In contrast, Ejiri discloses correcting a projected image by “mechanically adjusting an angle of an image-forming component of the projector with respect to the image projection surface.” [Ejiri, paragraph [0005], lines 8-10.] More specifically, Ejiri mechanically changes the angle of an image plate to adjust the projected image. [Ejiri, paragraph [0041], lines 14-17.]

The applicants amend claim 1 to recite the *predistorting comprises vertically scaling and horizontally scaling the original image using a vertical scalar and a horizontal scalar, respectively*. Claims 8, 20, and 29 include similar limitations. While rejecting a similar limitation in claim 23, the examiner acknowledges that Ejiri does not disclose vertically scaling the image using a vertical scalar. [Office action dated 06/14/2007, page 9, paragraph 10.] The examiner, however, alleges that West discloses such a vertical scaling and further alleges that it would be obvious to combine West with Ejiri to obtain the claimed invention.

Ejiri, as discussed above, discloses distorting the projected image by mechanically adjusting the angle of the image plate. Ejiri, however, does not perform any separate vertical scaling and a horizontal scaling of the image. And hence, Ejiri cannot use a vertical scalar and a horizontal scalar to vertically and horizontally scale the image. Even though West discloses a vertical scalar, combining West with Ejiri would change the principle of operation of Ejiri, as Ejiri does not use a separate vertical and horizontal scaling. And “if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.” [In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959), MPEP 2143.01.]

The Supreme Court has recently held that while determining obviousness for a §103 rejection, it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements” in the prior art to achieve the claimed invention and such a reasoning should be made explicit. KSR Int’l Co. v. Teleflex, Inc., No 04-1350 (U.S. Apr. 30, 2007). The Examiner has not identified any motivation, suggestion, or reason to replace the way Ejiri adjusts the projected image (by mechanically adjusting the image plate) with a horizontal and vertical scaling of the image, as suggested by West. The rejection, thus, is based on an impermissible hindsight reconstruction using the Applicant’s disclosure as a roadmap to achieve the claimed invention. Hence, a *prima facie* case of obviousness has not been established.

For at least these reasons, claims 1, 8, 20, and 29 are allowable, along with associated dependent claims.

The applicants amend claims 11 and 23 to make these claims independent. Claim 11 recites *the scaling comprises vertically scaling the image; and where the vertically scaling comprises calculating vertical scalar registers*. Claim 23 include similar limitations. As

discussed with respect to claim 1, Ejiri does not disclose vertically scaling the image and calculating vertical scale registers. For at least this reason, claims 11 and 23 are allowable, along with associated dependent claims.

Claim Rejections - 35 U.S.C. § 103

The examiner rejects claims 14-19 and 37 under 35 U.S.C. § 103(a) as being unpatentable over Ejiri in view of Kobayashi and Deering.

Claim 14 is amended to recite *without a means for mechanically changing an angle of an image plate in the apparatus*. Ejiri, as discussed above, discloses distorting the projected image mechanically by adjusting the angle of the image plate. In contrast, the current application predistorts an image by vertically and horizontally scaling the original image using a vertical scalar and a horizontal scalar, respectively, as disclosed in the specification, page 4, lines 7-9. Claim 14 makes this difference more explicit. For at least this reason, claim 14 is in condition for allowance, along with associated dependent claims.

New Claims

The applicants add new claims 38-41, support for which may be found throughout the specification.

Claim 38 recites *predistorting the original image is a function of a horizontal rotation angle and a vertical rotation angle of the desired keystone corrected image*. As discussed above, Ejiri discloses distorting the projected image by adjusting the angle of the image plate. In contrast, the limitation recites angles of the image (and not of the image plate). Additionally, Ejiri's image plate moves angles along a single dimension, given by equation (11) of page 3. Ejiri, thus, fails to disclose a *horizontal rotation angle* and a *vertical rotation angle* of the desired keystone corrected image, as would be required by claim 38.

Claim 39 recites *obtaining a sine function or a cosine function of the horizontal rotation angle* and claim 40 recites obtaining the function *using a precalculated look up table*. Ejiri does not use disclose obtaining such a sine or cosine function while correcting any distortion of the projected image.

Claim 41 recites *horizontally scaling subsequent to vertically scaling the original image*. Ejiri, as discussed with respect to claim 1, does not disclose horizontal and vertical scaling of the image. Rather, Ejiri merely angles an image plate to adjust a projected image. And hence, Ejiri cannot disclose a horizontally scaling *subsequent* to a vertically scaling of the original image.

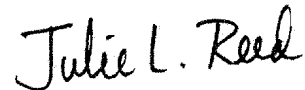
Conclusion

The applicants request reconsideration and allowance of all remaining claims. The applicants encourage the examiner to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

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Respectfully submitted,

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